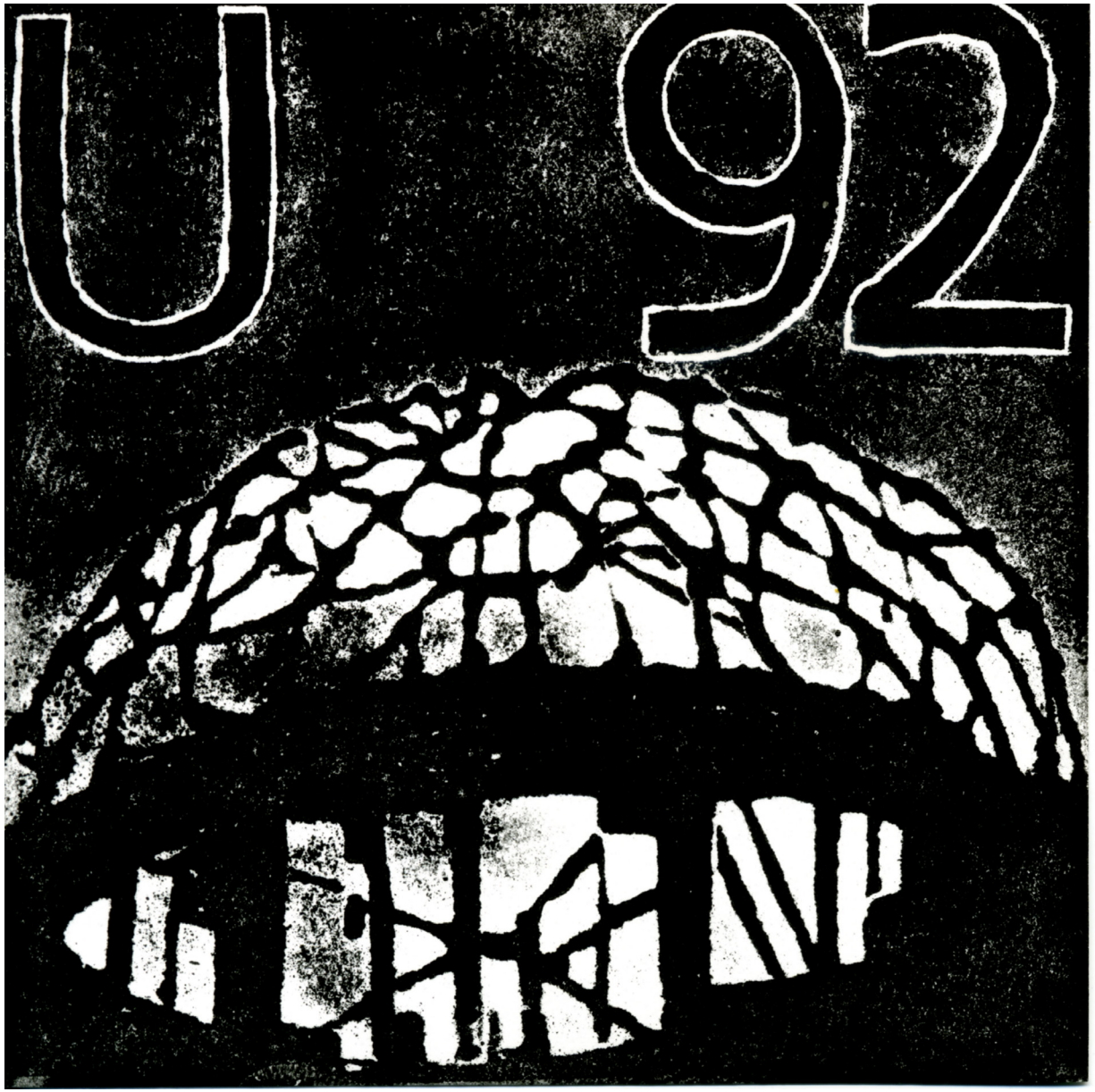

MARINELLE BASSON

URANIUM

Element Symbol: U
Atomic Number: 92

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URANIUM

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Uranium is a radioactive metallic element, naturally occurring in most rocks, soil, and even in the ocean. It is occurs more commonly than gold, silver or mercury. It is formed from volcanic activity. Although uranium is not very common in the universe, it is the main source of heat inside the earth. The element is named after the planet Uranus.

Uranium was discovered in 1789 in the mineral pitcheblende by German chemist, Martin Heinrich Klaproth. It wasn't until 1841 that Eugene Péligot isolated the pure metallic element. Antoine Becquerel discovered the radioactive properties of uranium in 1896. Research begun by Enrico Fermi and others from 1934 led to uranium being used as a fuel in the nuclear power industry, with the first artificial self-sustained nuclear chain reaction being initiated on 2 December 1942.

Of course, uranium can't be discussed without remembering the impact of the uranium-fuelled bomb detonated over the Japanese city of Hiroshima. This and the plutonium-fuelled bomb exploded over Nagasaki resulted in death of 200,000 people, and contributed to the end of WWII in the Pacific. A number of scientists who worked on the bomb were against its use, making submissions to the Interim Committee advising the US President. The ethical use of scientific discoveries continues to be debated around the world.

Until the world was thrust into the nuclear age with the detonation of the test atomic bomb in New Mexico on 16 July 1945, the commercial use of uranium was limited to providing colouring for ceramic products and very minor quantities of uranium metal.

Australia has 23% of the world's uranium ore reserves and the world's largest single uranium deposit is located at the Olympic Dame Mine in South Australia. In 1910 uranium, and radium, was discovered at Mount Painter in the Flinders Ranges. These elements were mined throughout the early century, mostly for cosmetic and medical purposes.

Uranium was discovered in 1906 at Radium Hill but was not mined until the mid-1950s. Between 1954 and 1961, this site produced about one tonne of yellow cake, which was processed at the Port Pirie plant to produces nuclear weapons for the US and UK. In 2009 South Australia produced about 5000 tonne (4000 T at Olympic Dam and 1000 T at Beverly), the value of which must be about $500 million.

A few months after the bombing of Hiroshima, South Australia amended the Mining Act 1930. These vested the ownership of the minerals uranium and thorium in the Crown and generally gave the Minister full control of the mining, treatment and use of those minerals. Without a licence from the Minister, the possession, use, selling and disposing of uranium and thorium was an offence. In 1949 the Uranium Mining Act was passed by the South Australian Parliament giving the Minister of Mines the power to open and work mines for the mining of uranium, and to sell, store or dispose of uranium from these mines.

Provided by the element sponsor sponsor Greg Metha

ARTISTS DESCRIPTION

The first atomic weapon used in war, detonated over Hiroshima, was a uranium fission bomb. One building that remained mostly intact after the bombing now forms part of the Hiroshima Peace Memorial Museum. The charred and distorted metalwork of the dome is both beautiful and poignant. Etched and cut lino was used for the print.

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